

Muhammad Akhtar Munir

✉ its.akhtar90@gmail.com | ✉ akhtar.munir@mbzuai.ac.ae
🔗 [Google Scholar](#) | [LinkedIn](#) | [GitHub](#)

Summary

I am a Postdoctoral Research Associate in Computer Vision at MBZUAI in Abu Dhabi. My research spans areas like Domain Adaptation, Uncertainty Estimation, Model Calibration, and Vision-Language Models (VLMs). Currently, I am focused on tackling challenges in Model Calibration, enhancing the accuracy of Weather Modeling, and improving Remote Sensing analysis through VLMs.

Experience

Research Associate *Jul 2023 – Present*

Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
Department of Computer Vision

Research Intern *Aug 2022 – Jun 2023*

Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
Department of Computer Vision

Research Associate *Jan 2022 – Jul 2022*

Information Technology University (ITU) of Punjab, Lahore, Pakistan
Under Google Research Scholar Award

Fellowship (Student) *Sep 2017 – Aug 2021*

Information Technology University (ITU) of Punjab, Lahore, Pakistan
Intelligent Machines Lab

Lab Engineer *Nov 2013 – Aug 2017*

School of Electrical Engineering and Computer Science (SEECS), NUST, Islamabad, Pakistan
Department of Computing

Publications (Selected)

1. **Muhammad Akhtar Munir**, Fahad Shahbaz Khan, and Salman Khan. (2024). *Efficient Localized Adaptation of Neural Weather Forecasting: A Case Study in the MENA Region*. Workshop on Tackling Climate Change with Machine Learning (CCAI-NeurIPS 2024).
2. Sohail Danish, Muhammad Haris Khan, **Muhammad Akhtar Munir**, M. Saquib Sarfraz, and Mohsen Ali. (2024). *Improving Single Domain-Generalized Object Detection: A Focus on Diversification and Alignment*. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024).

3. **Muhammad Akhtar Munir**, Salman Khan, Muhammad Haris Khan, Mohsen Ali, and Fahad Shahbaz Khan. (2023). *Cal-DETR: Calibrated Detection Transformer*. Conference on Neural Information Processing Systems (NeurIPS 2023).
4. **Muhammad Akhtar Munir**, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. (2023). *Domain Adaptive Object Detection via Balancing between Self-Training and Adversarial Learning*. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI).
5. **Muhammad Akhtar Munir**, Muhammad Haris Khan, Salman Khan, and Fahad Shahbaz Khan. (2023). *Bridging Precision and Confidence: A Train-Time Loss for Calibrating Object Detection*. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2023).
6. **Muhammad Akhtar Munir**, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. (2022). *Towards Improving Calibration in Object Detection Under Domain Shift*. Conference on Neural Information Processing Systems (NeurIPS 2022).
7. **Muhammad Akhtar Munir**, Muhammad Haris Khan, M. Saquib Sarfraz, and Mohsen Ali. (2021). *SSAL: Synergizing between Self-Training and Adversarial Learning for Domain Adaptive Object Detection*. Conference on Neural Information Processing Systems (NeurIPS 2021).

Education

Doctor of Philosophy in Computer Science

Sep 2017 – Dec 2024

Information Technology University, Lahore

CGPA: 3.50/4.0

Thesis: Domain Adaptation for Object Detection

Master of Science in Computer Science

Feb 2015 – Jun 2017

COMSATS Institute of Information Technology, Islamabad

CGPA: 3.84/4.0

Thesis: Ischemic Stroke Lesion Segmentation in MR Sequences Using MLP and SVM

Programming Languages & Tools

- **Programming Languages:** Python, C/C++, MATLAB
- **Deep Learning Frameworks:** PyTorch, Keras
- **Tools:** ArcGIS, Linux, VS Code, MS Office, L^AT_EX

Services & Honors

- **Reviewer:** CVPR 2023-2024, ICLR 2024, ICCV 2023, NeurIPS 2023-24, TPAMI
- **Awards:** NeurIPS 2022 & 2023 Scholar Award, CVPR 2023 DEI Award
- **Scholarship:** PhD Fellowship from Information Technology University, Lahore, Pakistan
- **Summer School:** EEML Summer School, Virtual Budapest, Hungary, 2021

References

- **Dr. Salman Khan**
Associate Professor
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
Email: salman.khan@mbzuai.ac.ae
- **Dr. Muhammad Haris Khan**
Assistant Professor
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, UAE
Email: muhammad.haris@mbzuai.ac.ae
- **Dr. Mohsen Ali**
Associate Professor
Information Technology University (ITU) of Punjab, Lahore, Pakistan
Email: mohsen.ali@itu.edu.pk